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IN THE CLAIMS:

1. *(previously presented)* A method of controlling return path ingress comprising the steps of:

(a) automatically detecting information on channel usage to distinguish active sub-bands from inactive sub-bands by performing the steps of:

- (i) estimating a power spectrum density (PSD) of a return path signal;
- (ii) correlating the PSD with a set of stored PSDs;
- (iii) determining a frequency at peak correlation; and
- (iv) defining the frequency band of step (iii) as an active sub-band;

(b) detecting the presence of return path ingress in the active sub-band of the return frequency band; and

(c) mitigating the return path ingress substantially near the subscriber location.

2. *(previously presented)* The method described in claim 1 wherein the detecting of step (b) occurs at the head-end.

3. *(previously presented)* The method as described in claim 1 wherein the detecting of step (b) occurs substantially near the subscriber location.

4. - 7. *cancelled*

8. *(previously presented)* The method described in claim 1 wherein the detecting of step (b) further comprises the steps of:

- (i) measuring an average return path signal power in the active sub-band of the return frequency band;
- (ii) comparing the average return path signal power to a detection threshold; and
- (iii) determining the presence of ingress in the active sub-band of the return frequency band based on the result of the comparison.

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9. *(original)* The method described in claim 8 further characterized in that the ingress is declared present when the average power exceeds the detection threshold.

10. *(previously presented)* The method described in claim 1 wherein the mitigating of step (c) is accomplished by attenuating the return path signal.

11. *(original)* The method of claim 10 wherein the attenuation is performed based on a power-level equalization algorithm.

12. *(previously presented)* The method described in claim 1 wherein the mitigating of step (c) is accomplished by isolating the return path signal.

13. - 15. *cancelled*

16. *(previously presented)* In a cable network environment having a head-end and a subscriber location with return path communication being accomplished in a return frequency band, a method of detecting and mitigating return path ingress, the method comprising the steps of:

(a) retrieving information on channel usage to distinguish active sub-bands from inactive sub-bands, wherein channel usage is detected automatically at a location substantially near the subscriber location by:

- (i) estimating a power spectrum density of a return path signal;
- (ii) correlating the PSD with a set of stored PSDs;
- (iii) determining a frequency at peak correlation; and
- (iv) determining a frequency sub-band in use;

(b) detecting the presence of ingress in active sub-bands of the return path; and
(c) mitigating the return path ingress at a location near the subscriber location.

17. - 19. *cancelled*

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20. *(previously presented)* The method described in claim 16 wherein the active sub-band is in use by an in-home device.

21. *(previously presented)* The method described in claim 16 wherein the active sub-band is in use by a communications gateway.

22. *(previously presented)* In a cable network environment having a head-end and a subscriber location with return path communications being accomplished in a return frequency band, a method of preventing in-home signals from entering an active sub-band of the return path at a location near the subscriber location, the method comprising the steps of:

(a) determining the active sub-band wherein the active sub-band is in use by a device located near the subscriber location, the determining using the steps of:

- (i) estimating a power spectrum density of a return path signal;
- (ii) correlating the PSD with a set of stored PSDs;
- (iii) determining a frequency at peak correlation; and
- (iv) determining a frequency sub-band in use;

(b) monitoring an in-home signal present in the active sub-band; and

(c) isolating the in-home signal when the in-home signal is above a predetermined threshold.

23. - 37. *cancelled*